REMARKS/ARGUMENTS

Objection was made to claim 1 because of an informality. Reconsideration of the objection is respectfully requested.

Claim 1 has been amended to overcome the objection.

Claims 1 and 3 were rejected under 35 U.S.C. §102(b) as being anticipated by Knapman et al., Great Britain Application No. 1,223,846. Reconsideration of the rejection is respectfully requested.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Knapman et al. Reconsideration of the rejection is respectfully requested.

In support of the rejection of independent claim 1, the Examiner alleges that element 20 in Knapman et al. is equivalent to the first flange of claim 1, that element 3 in Knapman et al. is equivalent to the second flange of claim 1, that element 12 in Knapman et al. is equivalent to the annular groove of claim 1, that element 17 in Knapman et al. is equivalent to the at least one duct of claim 1, and that element 13 of Knapman et al. is equivalent to the sealing element of claim 1, (Office Action, page 2, paragraph 3, lines 3, 7, 9; page 3, lines 1-2, 4).

Independent claim 1 has been amended to provide, in part, for, "the annular groove being configured to have a depth, from the end face of the second flange to a floor of the annular groove, which is greater than a maximum cross-sectional dimension of the sealing ring so that, after the sealing ring is sucked into the annular groove, and comes to rest against the floor of the annular groove, the distance of a point on the surface of the sealing ring, which is furthest from the floor of the annular groove, to the floor of the annular groove is less than the depth of the annular groove, thereby allowing a mutual displacement of the first flange and the second flange in a radial direction, without wear to the sealing ring," (emphasis supplied). Antecedent basis for this amendment to independent claim 1 is found in the English translation of the specification, as originally filed, for example, on page 4, lines 17-18, and on page 5, lines 18-21, and in the drawings, for example, in Fig. 1.

Knapman et al. teaches that an O-ring 13, which the Examiner has equated to the sealing element of independent claim 1, is disposed in annular groove 12, which the Examiner has equated to the annular groove of claim 1, (page 2, lines 22-25). Knapman et al. further teaches

that the O-ring 13 is made sufficiently large so that it protrudes from the annular groove 12 to contact the face of the flange 20 and form a seal when a gas or fluid, injected under pressure into the conduit 17, enters the annular groove 4 and moves the annular ring 1 forward until contact is made with the face of the flange 20, (see page 2, lines 57-68; Fig. 4).

Annular ring 1 is fitted into the cut-out portion 2 of flange 3, which the Examiner has equated to the second flange of claim 1, (page 2, lines 5-11; Figs. 3-4). Annular groove 12 is on the front surface of annular ring 1, (page 2, lines 5-8, 22-23; Fig. 1). The end face of flange 3, equated by the Examiner to the second flange of claim 1, has formed in it cut-out portion 2 in which annular ring 1 and annular groove 12 are located, (Fig. 3). That end face of flange 3 is located such that the distance from the floor of annular groove 12 to the end face of flange 3 appears, from both Figs. 3 and 4, to be less than the depth of annular groove 12 from the floor of annular groove 12 to the edges of annular groove 12, from which edges the front faces 14, on either side of the annular groove 12, are slanted backwards, (page 2, lines 25-27; Fig. 1).

Thus, the protrusion of O-ring 13 out of annular groove 12 indicates that the maximum cross-sectional dimension of O-ring 13 is larger than the depth of annular groove 12 from its floor to its edges, which, in turn, is larger than the depth from the floor of annular groove 12 to the end face of flange 3. In contrast independent claim 1 has been amended to provide that the annular groove is configured to be of a depth, from the end face of the second flange to a floor of the annular groove, which is greater than a maximum cross-sectional dimension of the sealing ring.

Since claims 3 and 5 are directly dependent upon independent claim 1, the arguments recited above with respect to independent claim 1 apply equally to dependent claims 3 and 5.

New independent claim 6 has been added, and is based upon independent claim 1, except that the amendment made to claim 1 herein at the end thereof is not included in claim 6, and except that claim 6 provides for, "the second flange further including at least one duct opening into the annular groove and being configured to selectively provide compressed air or an underpressure to the annular groove...," (emphasis supplied) Antecedent basis for this feature of claim 6 is found in the English translation of the originally filed specification, for example, on page 5, lines 8-12, and in the drawings, for example, in Figs. 1 and 2.

Knapman et al. teaches that conduit 17, alleged by the Examiner to be equivalent to the at least one duct of independent claim 1, has an opening 19 in flange 3, (see page 2, lines 37-41; Figs. 3-4). The opening 19 of conduit 17 opens into a cut-out portion 2 of flange 3, the annular ring 1 being fitted into the cut-out portion 2 of flange 3, (page 2, lines 5-11; Figs. 3-4).

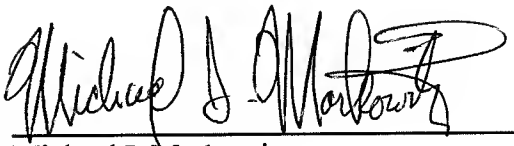
Thus, opening 19 does not open into annular groove 12, the alleged equivalent of the annular groove of claim 1, as would be analogously required by new claim 6. In fact, opening 19 faces annular groove 4 of annular ring 1, when annular ring 1 is fitted into cut-out portion 2 of flange 3, (Figs. 3-4). Annular groove 4 is on the rear surface of annular ring 1, and annular groove 12 is on the front surface of annular ring 1, (page 2, lines 5-8, 11-12, 22-23; Fig. 1). In contrast, claim 6 provides that the at least one duct opens into the annular groove.

New independent claim 7 has been added, and is based upon independent claim 1, except that instead of the amendment made to the end of claim 1, claim 7 provides for, "the annular groove and the sealing ring being configured such that, when the sealing ring is sucked into the annular groove and comes to rest on a floor of the annular groove, the sealing ring is below the top edges of the annular groove." Antecedent basis for this feature of claim 7 is found in the English translation of the specification, as originally filed, for example, on page 4, lines 17-18, and on page 5, lines 18-21, and in the drawings, for example, in Fig. 1.

As previously noted, in Knapman et al. O-ring 13 is made sufficiently large so that it protrudes from the annular groove 12. In contrast, claim 7 provides that the annular groove and the sealing ring are configured such that the sealing ring is below the top edges of the annular groove when the sealing ring is sucked into the annular groove and comes to rest on the floor of the annular groove.

In view of the foregoing amendments and remarks, allowance of claims 1, 3, and 5-7 is respectfully requested.

Respectfully submitted,



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